Trend Study 16C-14-99

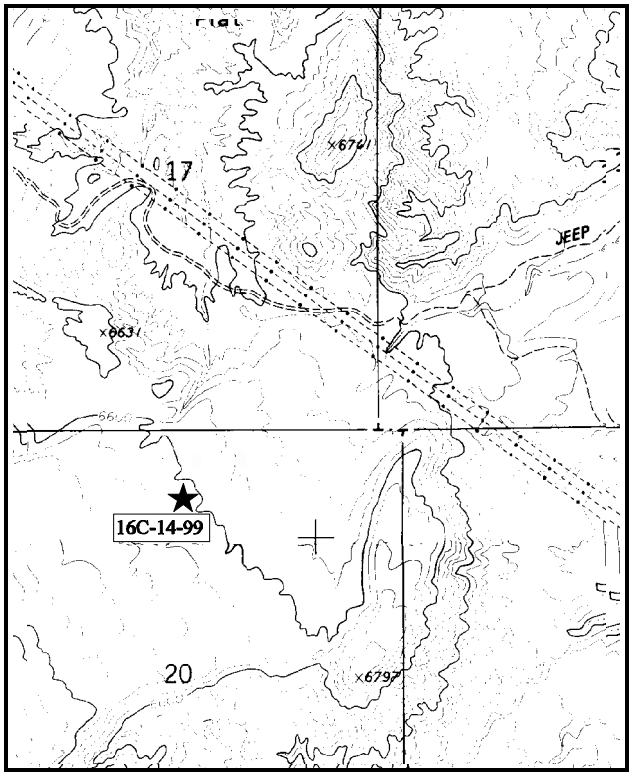
Study site name: Red Point . Range type: Chained, Seeded P-J .

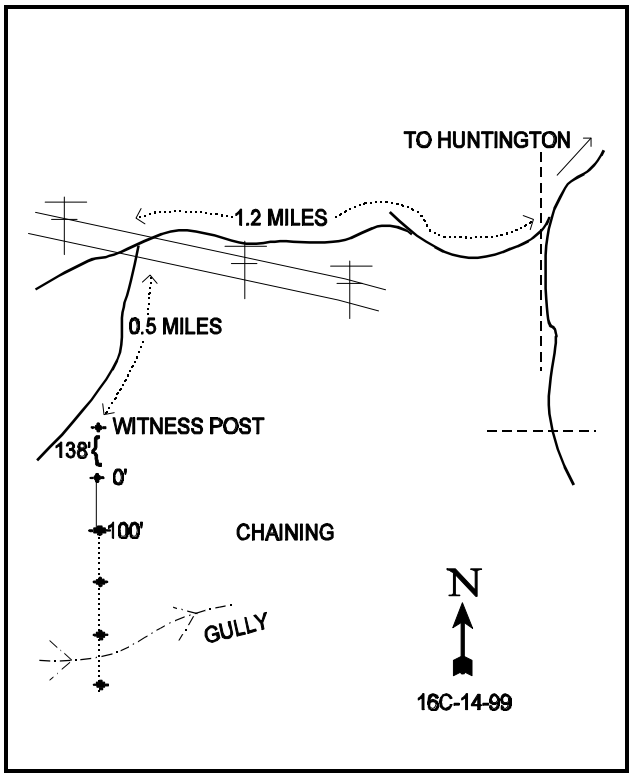
Compass bearing: frequency baseline 165°M.

Footmark (first frame placement) 5 feet, footmarks (frequency belts) line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

LOCATION DESCRIPTION

From Main Street in Huntington, go west on 400 North. Pass the old mill on the edge of town, cross the canal and continue 0.75 miles. Turn left off the old Huntington River road at a major fork. Proceed 1.55 miles, turn right, and go through a gate. Continue straight 0.2 miles to another fork and stay left for 1 mile. From here, stay straight for an additional 0.2 miles to a two-way fork. Turn left and go 0.5 miles to a witness post on the left side of the road in the chaining. The frequency baseline start 138 feet south of the witness post. The 18" tall fencepost marking the 0-foot baseline has browse tag #9012 attached.





Map Name: Red Point

Diagrammatic Sketch

Township 17S , Range 8E , Section 20

UTM 4353803.603 N, 495895.797 E

DISCUSSION

Trend Study No. 16C-14 (31-12)

The Red Point study is located in a chaining at the base of East Mountain, below the prominent Red Point. The 300 acre bench was chained and seeded in 1973. The large bench where the study is located slopes gradually (8-9%) with a northeast aspect. The elevation is 6,400 feet. The fractured sandstone bedrock allows true mountain mahogany and green ephedra to become well established on an otherwise shallow soil.

Overall declining trends and poor range condition observed in the West Huntington allotment led the BLM to recommend changes in grazing, eventually resulting in a 50% reduction in spring AUM'S and closure of one pasture. As part of the Huntington Canyon winter range, deer and elk utilize the area in winter. Pellet group data from 1999 estimate 25 deer, 55 elk, and 4 cow days use/acre (62 ddu/ha, 136 edu/ha, 10 cdu/ha). All cow sign appeared to be from last season. Some of the deer pellet groups were fresh and about 12 deer were observed near the site in 1999. All elk pellet groups appeared to be from winter use. Rabbits are common and several Cottontailes were seen.

Soil at the site is relatively deep with the effective rooting depth estimated at 16 inches. Soil texture is a loam with a slightly alkaline pH (7.6). Phosphorus is low at 4.1 ppm. Values below 10 ppm may limit normal plant growth and development. There are large numbers of boulders, smaller rocks, and pavement on the surface. These rocks are mostly sandstone and many have white calcite deposits. Rock and pavement currently ('99) produce 27% cover, while litter cover is estimated at 35%. Most of the litter consists of large debris from the chaining. Soil pedestaling and localized surface water movement is evident, but erosion is minimal due to the excessively well-drained nature of the soil, although there is evidence of erosion during high intensity summer storms.

An even-aged stand of surviving pinyon and juniper have regrown on the chained bench. Point-center quarter data from 1994 estimated 198 trees/acre, with 55% being pinyon and 45% being juniper. In 1999, mature pinyon and juniper trees averaged 10 to 12 feet in height. They provide 42% of the browse cover and overhead canopy cover averages 4%. Point quarter data from 1999 estimate 141 pinyon and 99 juniper trees/acre. Average diameter of pinyon is 2.5 inches while juniper averages 1.8 inches.

Green ephedra, slenderbush eriogonum, true mountain mahogany, and antelope bitterbrush provide the bulk of the winter forage on this site. None of these species are very abundant however. Both green ephedra and slenderbush eriogonum showed very light hedging in 1994, and moderate to heavy use in 1999. True mountain mahogany displays consistent moderate to heavy browsing since 1988. Yucca is very common with no utilization evident. The yuccas stiff, sharp leaves also protect the closely associated grasses from use.

The herbaceous understory is poor. Grasses produced only 10% cover in 1994 and 12% in 1999. The predominant grass is crested wheatgrass which currently ('99) provides 95% of the grass cover. A few other species are present but occur rarely. Forbs are uncommon and provide very little cover or forage. Nearly all herbaceous species have steadily declined in nested frequency since 1988.

1994 TREND ASSESSMENT

Ground cover characteristics have improved on the site since 1988. Percent bare ground has declined considerably while litter cover has increased. The only negative aspect of the soil trend is the decline in nested frequency of the herbaceous understory. Trend for soil is considered slightly up. Browse are not very abundant on the site but the trend is stable. Changes in density of true mountain mahogany and slenderbush eriogonum are mostly due to the greatly increased sample size used in 1994. Trend for the herbaceous understory is slightly down due to a decline in sum nested frequency of grasses and forbs. However, the dominant grass, crested wheatgrass, did not decline significantly.

TREND ASSESSMENT
soil - slightly up
browse - stable
herbaceous understory - slightly down

1999 TREND ASSESSMENT

Trend for soil is stable. Percent bare ground has remained similar to 1994 estimates, but litter cover declined and percent cover of rock and pavement increased. Some localized erosion is occurring, however it is not a serious problem due to the gentle terrain. Trend for browse is stable. Densities for the key species, true mountain mahogany and green ephedra, are stable and vigor is normal. Utilization of mahogany has remained moderate to heavy, while ephedra, dwarf rabbitbrush, and bitterbrush display heavier use compared to 1994. Trend for the herbaceous understory is stable yet poor. Sum of nested frequency of grasses has increased slightly, with nested frequency of forbs has declined slightly. Crested wheatgrass dominates the herbaceous understory by providing 91% of the herbaceous cover. It has increased slightly in nested frequency since 1994, but not significantly. Forbs are rare and have steadily declined in frequency since 1988. Overall, grasses and forbs provide only about 12% cover.

TREND ASSESSMENT
soil - stable
browse - stable
herbaceous understory - stable but poor

HERBACEOUS TRENDS --
Herd unit 16C, Study no: 14

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'88	'94	'99	'88	'94	'99	'94	'99
G	Agropyron cristatum	270	265	284	91	88	94	8.66	11.28
G	Agropyron intermedium	$_{b}$50	$_{a}$1	$_{a}$-	22	1	-	.00	-
G	Elymus junceus	$_{a}$2	$_{b}$16	$_{ab}$9	1	7	4	.35	.25
G	Oryzopsis hymenoides	24	25	20	12	14	7	.52	.37
G	Sitanion hystrix	$_{b}$45	$_{a}$1	$_{a}$-	22	1	-	.00	-
Total for Annual Grasses		0	0	0	0	0	0	0	0
Total for Perennial Grasses		391	308	313	148	111	105	9.54	11.91
Total for Grasses		391	308	313	148	111	105	9.54	11.91
F	Arabis perennans	-	2	5	-	1	2	.00	.01
F	Caulanthus crassicaulis	-	1	-	-	1	-	.00	-
F	Chenopodium album (a)	-	1	-	-	1	-	.01	-
F	Cryptantha spp.	$_{c}$74	$_{b}$45	$_{a}$17	33	21	8	.65	.35
F	Descurainia pinnata (a)	-	10	3	-	4	1	.02	.00
F	Eriogonum alatum	-	-	-	-	-	-	.00	-
F	Erigeron spp.	4	-	-	1	-	-	-	-
F	Eriogonum spp.	-	4	2	-	2	2	.03	.01
F	Euphorbia spp.	$_{c}$137	$_{b}$41	20	55	18	9	.17	.04

Type	Species	Nested Frequency '88	'94	'99	Quadrat Frequency '88	'94	'99	Average Cover % '94	'99
F	Gilia congesta	4	-	-	1	-	-	-	-
F	Hymenoxys richardsonii	-	-	5	-	-	2	-	.01
F	Lappula occidentalis (a)	-	-	3	-	-	1	-	.00
F	Leucelene ericoides	$_{a}$-	$_{b}$3	$_{ab}$3	-	1	1	.15	.03
F	Lepidium montanum	2	-	-	1	-	-	-	-
F	Machaeranthera grindelioides	-	1	-	-	1	-	.00	-
F	Medicago sativa	$_{b}$5	$_{a}$-	$_{a}$-	3	-	-	.00	-
F	Penstemon cyananthus	$_{b}$32	$_{a}$2	$_{a}$2	19	2	1	.03	.00
F	Salsola iberica (a)	-	5	-	-	2	-	.01	-
F	Schoencrambe linifolia	10	4	4	6	3	2	.02	.04
F	Thelesperma subnudum	15	16	-	7	6	-	.08	-
F	Townsendia incana	$_{b}$6	$_{ab}$6	$_{a}$5	4	2	2	.01	.01
F	Unknown forb-perennial	3	-	-	1	-	-	-	-
Total for Annual Forbs		0	16	6	0	7	2	0.03	0.00
Total for Perennial Forbs		292	125	63	131	58	29	1.17	0.51
Total for Forbs		292	141	69	131	65	31	1.21	0.52

Values with different subscript letters are significantly different at % = 0.10

BROWSE TRENDS --
Herd unit 16C, Study no: 14

Type	Species	Strip Frequency '94	'99	Average Cover % '94	'99
B	Ceratoides lanata	0	0	-	-
B	Cercocarpus montanus	6	6	.63	1.28
B	Chrysothamnus nauseosus	0	1	-	-
B	Ephedra viridis	15	15	1.08	4.49
B	Eriogonum microthecum	11	4	.00	.03
B	Juniperus osteosperma	0	6	.93	3.20
B	Opuntia spp.	1	0	-	-
B	Pinus edulis	0	13	3.31	4.06
B	Purshia tridentata	1	3	.03	-
B	Yucca harrimaniae	28	33	2.65	4.41
Total for Browse		62	81	8.65	17.49

CANOPY COVER --
Herd unit 16C, Study no: 14

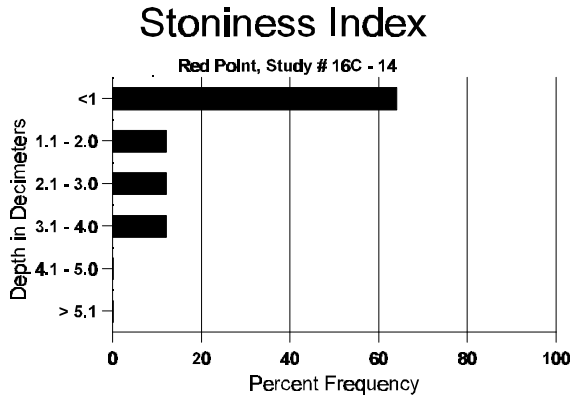
Species	Percent Cover '99
Juniperus osteosperma	2
Pinus edulis	2

BASIC COVER --
Herd unit 16C, Study no: 14

Cover Type	Nested Frequency '94	Nested Frequency '99	Average Cover % '88	Average Cover % '94	Average Cover % '99
Vegetation	282	307	3.50	19.52	27.82
Rock	251	234	14.25	13.35	18.65
Pavement	274	258	7.00	4.23	8.49
Litter	382	363	37.25	41.90	34.64
Cryptogams	10	40	0	.02	1.52
Bare Ground	248	244	38.00	17.68	17.72

SOIL ANALYSIS DATA --
Herd Unit 16C, Study # 14, Study Name: Red Point

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
16.1	34.6 (17.4)	7.6	46.7	29.4	23.8	3.4	4.1	102.4	0.9



PELLET GROUP DATA --
Herd unit 16C, Study no: 14

Type	Quadrat Frequency '94	Quadrat Frequency '99	Pellet Transect Days Use/Acre (ha) '99
Rabbit	30	56	n/a
Elk	35	40	55 (136)
Deer	19	33	25 (62)
Cattle	-	4	4 (10)

BROWSE CHARACTERISTICS --
Herd unit 16C, Study no: 14

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Ceratoides lanata																		
M	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	13	11	0
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	00%	
'94	00%	00%	00%	
'99	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)			Dec:	
	'88	0		-
	'94	0		-
	'99	0		-

Cercocarpus montanus																		
S	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
Y	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	1	-	1	-	-	-	-	-	-	2	-	-	-	40			2
	99	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
M	88	-	2	3	1	-	-	-	-	-	5	1	-	-	400	50	41	6
	94	-	3	1	-	-	-	-	-	-	4	-	-	-	80	46	69	4
	99	-	2	1	-	-	1	1	-	-	5	-	-	-	100	54	58	5

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	33%	50%	00%	-70%
'94	50%	33%	00%	+14%
'99	29%	29%	00%	

Total Plants/Acre (excluding Dead & Seedlings)			Dec:	
	'88	400		-
	'94	120		-
	'99	140		-

Chrysothamnus nauseosus																		
M	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	9	10	0
	99	-	-	1	-	-	-	-	-	-	1	-	-	-	20	-	-	1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	00%	
'94	00%	00%	00%	
'99	00%	100%	00%	

Total Plants/Acre (excluding Dead & Seedlings)			Dec:	
	'88	0		-
	'94	0		-
	'99	20		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Ephedra viridis																		
Y	88	1	5	1	-	-	-	-	-	-	7	-	-	-	466			7
	94	4	-	-	-	-	-	-	-	-	4	-	-	-	80			4
	99	2	-	1	-	-	-	-	-	-	3	-	-	-	60			3
M	88	-	6	-	-	-	-	-	-	-	6	-	-	-	400	24	30	6
	94	22	-	-	-	-	-	-	-	-	22	-	-	-	440	38	56	22
	99	9	12	-	-	1	-	-	-	-	22	-	-	-	440	37	54	22
X	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	60			3
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	60			3

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	85%	08%	00%	-40%
'94	00%	00%	00%	- 4%
'99	52%	04%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	866	Dec:	-
	'94	520		-
	'99	500		-

Eriogonum microthecum																		
S	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
Y	88	3	-	-	-	-	-	-	-	-	3	-	-	-	200			3
	94	29	-	-	-	-	-	-	-	-	29	-	-	-	580			29
	99	4	-	3	-	-	-	-	-	-	7	-	-	-	140			7
M	88	5	-	-	-	-	-	-	-	-	5	-	-	-	333	2	2	5
	94	35	-	-	-	-	-	-	-	-	35	-	-	-	700	3	4	35
	99	2	-	-	-	-	-	-	-	-	2	-	-	-	40	2	3	2
D	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	-	-	-	-	-	3	4	-	-	-	-	-	7	140			7
X	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	60			3

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	00%	+58%
'94	00%	00%	00%	-75%
'99	00%	38%	44%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	533	Dec:	0%
	'94	1280		0%
	'99	320		44%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Juniperus osteosperma																		
Y	88	3	-	-	-	-	-	-	-	-	3	-	-	-	200			3
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	5	-	-	-	-	-	-	-	-	5	-	-	-	100			5
M	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	99	-	-	-	1	-	-	-	-	-	1	-	-	-	20	-	-	1
X	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	40			2

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor
'88	00%	00%	00%
'94	00%	00%	00%
'99	00%	00%	00%

%Change

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	200	Dec:	-
	'94	0		-
	'99	120		-

Opuntia spp.																		
M	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	94	1	-	-	-	-	-	-	-	-	1	-	-	-	20	8	11	1
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
D	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	1	-	-	-	-	-	-	-	-	-	-	-	1	20			1
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor
'88	00%	00%	00%
'94	00%	00%	50%
'99	00%	00%	00%

%Change

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	0	Dec:	0%
	'94	40		50%
	'99	0		0%

Pinus edulis																		
Y	88	5	-	-	-	-	-	1	-	-	6	-	-	-	400			6
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	3	-	-	2	-	-	-	-	-	5	-	-	-	100			5
M	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	99	7	-	-	1	-	-	-	-	-	7	-	1	-	160	23	26	8

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor
'88	00%	00%	00%
'94	00%	00%	00%
'99	00%	00%	08%

%Change

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	400	Dec:	-
	'94	0		-
	'99	260		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Purshia tridentata																		
Y	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	-	-	1	-	-	-	-	-	-	1	-	-	-	20			1
M	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	94	1	-	-	-	-	-	-	-	-	1	-	-	-	20	19	20	1
	99	6	-	-	-	-	-	-	-	-	-	-	-	-	120	22	29	6
D	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	-	-	-	-	-	1	-	-	-	1	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	00%	-70%
'94	00%	00%	00%	+88%
'99	00%	25%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	66	Dec:	0%
	'94	20		0%
	'99	160		13%

Yucca harrimaniae																		
Y	88	8	-	-	-	-	-	-	-	-	8	-	-	-	533			8
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	6	-	-	-	-	-	-	-	-	6	-	-	-	120			6
M	88	24	-	-	-	-	-	-	-	-	24	-	-	-	1600	17	15	24
	94	84	-	-	-	-	-	-	-	-	82	-	2	-	1680	14	21	84
	99	97	-	-	-	-	-	-	-	-	97	-	-	-	1940	14	18	97
D	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	2	-	-	-	-	-	-	-	-	1	-	-	1	40			2
X	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	100			5

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	00%	-21%
'94	00%	00%	02%	+20%
'99	00%	00%	.95%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	2133	Dec:	0%
	'94	1680		0%
	'99	2100		2%